

Crosswalk 2 – Concepts

NIST AI Risk Management Framework and Japan AI Guidelines for Business

The NIST AI Risk Management Framework 1.0 (NIST AI RMF)¹ is a voluntary resource created to improve the ability to incorporate trustworthiness considerations into the design, development, use, and evaluation of AI products, services, and systems. The Japan AI Guidelines for Business (Japan AI GfB)² is a framework that promotes innovation and the reduction of risks across the lifecycle by encouraging AI business actors to fully recognize AI risks based on international trends and stakeholders’ concerns. The purpose of this crosswalk is to compare and contrast the key concepts addressed in the NIST AI RMF with the concepts addressed in the Japan AI GfB.

Table 1 below presents the crosswalk mapping and analysis. The following list describes each column in the table.

Topic	Conceptual topics derived from the NIST AI RMF Playbook ³ used to anchor the comparative analysis of this crosswalk
NIST AI RMF References	NIST AI RMF subcategories linked to each topic by the Playbook
Japan AI GfB References	Japan AI GfB sections (including appendices ⁴) identified by Japan as addressing the topic
Notable Similarities & Differences	Observations on how the NIST AI RMF and the Japan AI GfB align or differ on the treatment of each topic ⁵

¹ <https://nvlpubs.nist.gov/nistpubs/ai/NIST.AI.100-1.pdf>

² https://www.meti.go.jp/english/press/2024/0419_002.html

³ https://airc.nist.gov/AI_RM_F_Knowledge_Base/Playbook

⁴ Japan AI GfB includes a number of appendices. Three in particular correspond to different groups of AI actors: Appendix 3 to AI Developers, Appendix 4 to AI Providers, and Appendix 5 to AI Business Users.

⁵ This column includes some observations of “No differences noted.” This language indicates that no major conceptual differences between the NIST AI RMF and the Japan AI GfB were identified for that topic, though it does not imply that no differences are present.

Table 1. Crosswalk of Concepts between NIST AI Risk Management Framework and Japan AI Guidelines for Business

NIST AI RMF 1.0 References	Topic	Japan AI GfB References	Notable Similarities & Differences
Govern 1.2 Map 1.1 Map 3.2 Measure 1.1 Measure 2.8 Measure 4.2 Measure 4.3	Accountability and Transparency	<u>Main:</u> Part 2.C.6 Part 2.C.7 Part 2.D.III Part 2.D.XI Part 2.E.3 <u>Appendix:</u> Appendix 2.A.1-1 Appendix 2.A.3-4-1 Appendix 2.A.4-1 Appendix 2.A.4-3 Appendix 3.A.D-2.ii Appendix 3.A.D-6.i Appendix 3.A.D-6.ii Appendix 3.A.D-7.i Appendix 3.A.D-7.ii Appendix 3.B.1 Appendix 3.B.6 Appendix 3.B.7 Appendix 3.C.I Appendix 3.C.III Appendix 3.C.IV Appendix 3.C.XI Appendix 4.A.P-4.i Appendix 4.A.P-7.i Appendix 4.B.6 Appendix 6.3	No differences noted.
Govern 4.1 Manage 4.1 Measure 2.7	Adversarial	<u>Appendix:</u> Appendix 4.A.P-5.ii Appendix 5.A.U-5.i	Both the NIST AI RMF and the Japan AI GfB highlight the significance of considering adversarial attacks as a potential risk to AI system vulnerabilities. In addition, the NIST AI RMF emphasizes the importance of adversarial testing by red teaming as a suggested approach for risk management.

NIST AI RMF 1.0 References	Topic	Japan AI GfB References	Notable Similarities & Differences
Manage 1.1 Manage 2.2 Manage 4.1	AI Deployment	<u>Main:</u> Part 2.D.I Part 2.D.II <u>Appendix:</u> Appendix 3.A.D-2.i Appendix 3.A.D-2.ii Appendix 3.A.D-5.i Appendix 3.A.D-5.ii Appendix 3.A.D-6.ii	Both the NIST AI RMF and the Japan AI GfB emphasize the importance of regular monitoring and mechanisms to sustain the value of AI systems post-deployment. In addition, the Japan AI GfB suggests incentives for reporting post-deployment issues.
Govern 4.3 Manage 4.1 Manage 4.3	AI Incidents	<u>Main:</u> Part 2.D.II Part 2.D.IV <u>Appendix:</u> Appendix 2.A.1-1 Appendix 2.A.1-2 Appendix 2.A.2-1 Appendix 2.A.3-1 Appendix 2.A.3-2 Appendix 2.A.3-3-2 Appendix 2.A.3-4 Appendix 2.A.3-4-2 Appendix 2.A.4-1 Appendix 2.A.5-1 Appendix 2.A.6-1 Appendix 3.A.D-2.iii Appendix 3.A.D-5.i Appendix 3.A.D-5.ii Appendix 3.A.D-6.ii Appendix 3.A.D-7.ii Appendix 4.A.P-2.i Appendix 4.A.P-2.ii Appendix 4.A.P-6.i Appendix 4.A.P-5.ii Appendix 4.A.P-6.ii Appendix 4.A.P-7.ii Appendix 4.B.2 Appendix 5.A.U-2.i	No differences noted.

NIST AI RMF 1.0 References	Topic	Japan AI GfB References	Notable Similarities & Differences
Measure 3.3	Contestability	<u>Main:</u> Part 2.C.6 <u>Appendix:</u> Appendix 2.A.1-2 Appendix 2.A.3-1 Appendix 2.A.3-3-1 Appendix 2.A.3-3-2 Appendix 2.A.3-4-1 Appendix 2.A.5-2 Appendix 2.A.6-1 Appendix 3.A.D-6.ii Appendix 3.B.7 Appendix 4.B.6	No differences noted.
Map 1.1 Map 1.4 Map 3.3 Measure 1.2 Measure 1.3 Measure 2.6 Measure 4.1	Context of Use	<u>Main:</u> Part 2.C.1 Part 2.D.II <u>Appendix:</u> Appendix 3.A.D-3.ii Appendix 3.A.D-7.ii Appendix 3.B.1 Appendix 3.B.6 Appendix 4.A.P-6.ii Appendix 4.B.1 Appendix 4.B.6 Appendix 5.A.U-2.i Appendix 5.A.U-3.i Appendix 5.A.U-6.i	No differences noted.
Measure 3.1 Measure 3.2	Continual Improvement	<u>Main:</u> Part 2.E.4 <u>Appendix:</u> Appendix 2.A.3-1 Appendix 2.A.5-1	No differences noted.

NIST AI RMF 1.0 References	Topic	Japan AI GfB References	Notable Similarities & Differences
Govern 1.5 Manage 3.2 Manage 4.1 Manage 4.2 Manage 4.3 Measure 2.4 Measure 3.1 Measure 3.2	Continuous Monitoring	<u>Main:</u> Part 2.C.2 Part 2.D.II Part 2.D.IV Part 2.E.4 <u>Appendix:</u> Appendix 2.A.3-3 Appendix 2.A.4-2 Appendix 2.A.5-1 Appendix 2.A.6-1 Appendix 3.A.D-3.i Appendix 3.A.D-3.ii Appendix 3.A.D-5. Appendix 3.B.1 Appendix 3.B.7 Appendix 4.A.P-6.ii Appendix 4.B.6	No differences noted.
Govern 1.7 Manage 2.4	Decommission	<u>Appendix:</u> Appendix 5.A.U-7.i Appendix 5.A.U-7.ii	The NIST AI RMF emphasizes the importance of establishing mechanisms and responsibilities for safely decommissioning AI systems, while the Japan AI GfB focuses on the necessary disclosure of information to stakeholders following the end of AI systems and services use.
Govern 3.1 Map 1.2	Diversity and Interdisciplinarity	<u>Main:</u> Part 2.C.1 Part 2.C.3 Part 2.C.7 <u>Appendix:</u> Appendix 2.A.1-2 Appendix 3.B.1 Appendix 4.B.1 Appendix 5.B.1	Both the NIST AI RMF and the Japan AI GfB focus on the importance of diversity of AI actors in the mapping, measuring, and managing of AI risks throughout the lifecycle. In addition, the NIST AI RMF emphasizes the importance of including interdisciplinary expertise from AI actors.

NIST AI RMF 1.0 References	Topic	Japan AI GfB References	Notable Similarities & Differences
Govern 1.4 Govern 1.6 Map 1.6 Map 2.2 Map 3.1 Map 3.3 Measure 2.1	Documentation	<u>Main:</u> Part 2.C.7 Part 2.D.II Part 2.D.III <u>Appendix:</u> Appendix 2.A.1-1 Appendix 2.A.3-3-1 Appendix 3.A.D-5.i Appendix 3.A.D-7.i Appendix 3.A.D-7.ii Appendix 3.C.I Appendix 3.C.II Appendix 3.C.III Appendix 3.C.IV Appendix 4.A.P-6.i Appendix 4.A.P-7.ii Appendix 4.B.6	No differences noted.
Govern 4.3 Manage 2.2 Measure 2.4	Drift	<u>Appendix:</u> Appendix 3.A.D-2.i Appendix 3.A.D-6.i Appendix 3.A.D-7.i	Both the NIST AI RMF and the Japan AI GfB state the possible risk of drift in AI systems. In addition, the NIST AI RMF emphasizes the importance of a regular monitoring process to detect and respond to drift.
Measure 2.13	Effectiveness	<u>Main:</u> Part 2.E.4 <u>Appendix:</u> Appendix 2.A.3-1 Appendix 4.B.6	No differences noted.
Measure 2.12	Environmental Impact	<u>Main:</u> Part 2.C.1 Part 2.C.2 <u>Appendix:</u> Appendix 2.A.1-1 Appendix 2.A.1-2 Appendix 3.A.D-2.ii Appendix 3.B.1 Appendix 3.C.VIII Appendix 4.A.P-2.i Appendix 4.B.1 Appendix 4.B.2 Appendix 5.B.2	No differences noted.

NIST AI RMF 1.0 References	Topic	Japan AI GfB References	Notable Similarities & Differences
Govern 1.2 Map 1.1 Map 3.2 Measure 1.1 Measure 2.9 Measure 4.2 Measure 4.3	Explainability and Interpretability	<u>Main:</u> Part 2.C.6 <u>Appendix:</u> Appendix 3.A.D-6.i Appendix 3.B.6 Appendix 3.C.I Appendix 4.A.P-6.i Appendix 4.B.3 Appendix 4.B.6 Appendix 5.A.U-6.i Appendix 5.B.3	No differences noted.
Govern 1.2 Govern 4.3 Map 1.1 Map 3.2 Measure 1.1 Measure 2.11 Measure 4.2 Measure 4.3	Fairness and Bias	<u>Main:</u> Part 2.C.1 Part 2.C.3 Part 2.C.7 Part 2.D.XI Part 2.E.3 <u>Appendix:</u> Appendix 2.A.1-1 Appendix 2.A.1-3 Appendix 2.A.3-1 Appendix 2.A.3-3-2 Appendix 2.A.4-2 Appendix 3.A.D-3.i Appendix 3.A.D-3.ii Appendix 3.A.D-6.ii Appendix 3.A.D-7.i Appendix 3.B.1 Appendix 3.C.I Appendix 3.C.III Appendix 4.A.P-3.i Appendix 4.A.P-5.i Appendix 4.A.P-6.ii Appendix 4.B.1 Appendix 4.B.3 Appendix 5.A.U-3.i Appendix 5.A.U-6.i Appendix 5.A.U-7.i Appendix 5.B.1 Appendix 5.B.3 Appendix 5.B.8	No differences noted.

NIST AI RMF 1.0 References	Topic	Japan AI GfB References	Notable Similarities & Differences
Govern 1.1 Govern 1.2 Govern 1.3 Govern 1.4 Govern 1.5 Govern 1.6 Govern 1.7 Govern 2.1 Govern 2.2 Govern 2.3 Govern 3.1 Govern 3.2 Govern 4.1 Govern 4.2 Govern 4.3 Govern 5.1 Govern 5.2 Govern 6.1 Govern 6.2	Governance	<u>Main:</u> Part 2.C.7 Part 2.D.V Part 2.E <u>Appendix:</u> Appendix 2 Appendix 3.A.D-2.ii Appendix 3.A.D-6.ii Appendix 3.B.1 Appendix 3.B.7 Appendix 3.C.V Appendix 4.A.P-6.ii Appendix 4.B.8 Appendix 5.B.8	No differences noted.
Govern 3.2 Map 2.2 Map 3.5	Human Oversight	<u>Main:</u> Part 2.C.2 Part 2.C.3 Part 2.C.7 <u>Appendix:</u> Appendix 3.A.D-3.i Appendix 3.A.D-2.ii Appendix 3.A.D-3.ii Appendix 3.B.1 Appendix 4.A.P-2.i Appendix 4.B.3 Appendix 5.A.U-3.i Appendix 5.A.U-7.i Appendix 5.B.3	No differences noted.

NIST AI RMF 1.0 References	Topic	Japan AI GfB References	Notable Similarities & Differences
Measure 2.2	Human Subjects Protection	<p><u>Main:</u> Part 2.C.1 Part 2.C.2 Part 2.C.4</p> <p><u>Appendix:</u> Appendix 3.A.D-2.i Appendix 3.A.D-2.ii Appendix 3.B.1 Appendix 3.B.4 Appendix 3.C.VIII Appendix 4.A.P-2.i Appendix 4.A.P-4.i Appendix 4.A.P-4.ii Appendix 4.B.1 Appendix 4.B.2 Appendix 5.A.U-4.i Appendix 5.B.1 Appendix 5.B.2</p>	No differences noted.
Govern 3.2 Map 3.4	Human-AI Teaming	<p><u>Main:</u> Part 2.C.1</p> <p><u>Appendix:</u> Appendix 3.A.D-3.i Appendix 3.B.1 Appendix 3.B.8 Appendix 4.A.P-2.ii Appendix 4.A.P-7.i Appendix 4.B.1 Appendix 4.B.2 Appendix 4.B.8 Appendix 5.A.U-2.i Appendix 5.B.1 Appendix 5.B.2 Appendix 5.B.8</p>	No differences noted.

NIST AI RMF 1.0 References	Topic	Japan AI GfB References	Notable Similarities & Differences
Govern 4.2 Govern 4.3 Govern 5.1 Govern 5.2 Manage 4.2 Map 1.1 Map 1.6 Map 2.2 Map 2.3 Map 3.2 Map 5.1 Map 5.2 Measure 1.2 Measure 1.3 Measure 2.3 Measure 3.3	Impact Assessment	<u>Main:</u> Part 2.C.6 <u>Appendix:</u> Appendix 2.A.3-1 Appendix 3.B.4 Appendix 3.B.6 Appendix 3.C.I Appendix 3.C.III Appendix 4.A.P-6.ii	No differences noted.
Govern 1.1 Govern 6.1 Manage 1.3 Map 4.1	Legal and Regulatory	<u>Main:</u> Part 2.E.5 <u>Appendix:</u> Appendix 2.A.1-2 Appendix 2.A.3-3 Appendix 2.A.6-1 Appendix 4.A.P-5.i Appendix 4.A.P-6.ii	No differences noted.
Map 2.2 Map 2.3	Limitations	<u>Main:</u> Part 2.C.1 Part 2.C.6 Part 2.D.III <u>Appendix:</u> Appendix 2.A.3-3	No differences noted.

NIST AI RMF 1.0 References	Topic	Japan AI GfB References	Notable Similarities & Differences
Manage 3.2 Map 4.1 Map 4.2	Pre-trained Models	<u>Appendix:</u> Appendix 3.B.4 Appendix 4.A.P-5.ii	<p>The NIST AI RMF emphasizes pre-trained models are to be monitored due to concerns about privacy, bias, security, unanticipated effects, increased statistical uncertainty, difficulty with reproducibility, and issues with scientific validity. The NIST AI RMF also emphasizes identifying and documenting internal risk controls for evaluating third-party technologies to manage potential risks with pre-trained models. The Japan AI GfB expands on the security issue by stating the importance of using model reliability measures, learning mechanisms, traditional security measures against vulnerabilities, and detection, prevention, and removal of poisoning of pre-trained models.</p>

NIST AI RMF 1.0 References	Topic	Japan AI GfB References	Notable Similarities & Differences
Govern 1.2 Map 1.1 Map 3.2 Measure 1.1 Measure 2.10 Measure 4.2 Measure 4.3	Privacy	<u>Main:</u> Part 2.C.4 Part 2.C.6 Part 2.C.7 Part 2.D.V <u>Appendix:</u> Appendix 2.A.2-1 Appendix 2.A.3-1-1 Appendix 2.A.3-3 Appendix 2.A.3-4-2 Appendix 3.A.D-2.i Appendix 3.A.D-3.i Appendix 3.A.D-2.ii Appendix 3.A.D-2.iii Appendix 3.A.D-5.i Appendix 3.A.D-6.ii Appendix 3.A.D-7.i Appendix 3.B.1 Appendix 3.B.4 Appendix 3.B.6 Appendix 3.B.7 Appendix 3.C.I Appendix 3.C.III Appendix 3.C.V Appendix 3.C.VIII Appendix 3.C.XI Appendix 4.A.P-2.ii Appendix 4.A.P-3.i Appendix 4.A.P-4.i Appendix 4.A.P-5.i Appendix 4.A.P-4.ii Appendix 4.A.P-5.ii Appendix 4.A.P-6.ii Appendix 4.A.P-7.i Appendix 4.A.P-7.ii Appendix 5.B.1 Appendix 5.A.U-2.i Appendix 5.A.U-3.i Appendix 5.A.U-4.i Appendix 5.A.U-7.i Appendix 5.B.8	No differences noted.
Manage 1.1 Manage 4.2 Measure 1.1	Risk Assessment	<u>Main:</u> Part 2.E.4 <u>Appendix:</u> Appendix 2.A.1-1	No differences noted.

NIST AI RMF 1.0 References	Topic	Japan AI GfB References	Notable Similarities & Differences
Govern 2.1 Govern 4.1 Govern 4.2 Govern 4.3	Risk Culture	<u>Main:</u> Part 2.E <u>Appendix:</u> Appendix 2.A.6-1	No differences noted.
Manage 1.4 Manage 2.3 Manage 2.4 Manage 4.1	Risk Response	<u>Appendix:</u> Appendix 2.A.3-4 Appendix 3.B.4	No differences noted.
Govern 1.3 Govern 2.3 Manage 1.2 Manage 1.3 Manage 2.1 Map 1.5 Map 4.1	Risk Tolerance	<u>Appendix:</u> Appendix 2.A.2-1	No differences noted.
Manage 2.4 Manage 4.1 Map 4.1 Measure 1.1 Measure 2.7	Risky Emergent Behavior	<u>Main:</u> Part 2.C.5	No differences noted.
Govern 1.2 Map 1.1 Map 3.2 Measure 1.1 Measure 2.6 Measure 4.2 Measure 4.3	Safety	<u>Main:</u> Part 2.C.2 Part 2.D.I <u>Appendix:</u> Appendix 2.A.1-3 Appendix 3.A.D-2.ii Appendix 3.A.D-10.i Appendix 3.B.7 Appendix 4.A.P-6.ii Appendix 4.B.2 Appendix 5.B.2	No differences noted.
Govern 1.2 Map 1.1 Map 3.2 Measure 1.1 Measure 2.7 Measure 4.2 Measure 4.3	Secure and Resilient	<u>Main:</u> Part 2.C.8 <u>Appendix:</u> Appendix 3.A.D-2.ii Appendix 3.A.D-3.i Appendix 3.A.D-5.i Appendix 3.B.8 Appendix 4.A.P-5.i Appendix 4.B.8 Appendix 5.B.8	No differences noted.
Manage 2.2 Map 1.1 Map 1.3	Societal Values	<u>Appendix:</u> Appendix 2.A.1-2 Appendix 2.A.2-1 Appendix 2.A.5-1 Appendix 4.A.P-4.ii	No differences noted.

NIST AI RMF 1.0 References	Topic	Japan AI GfB References	Notable Similarities & Differences
Map 1.1 Map 1.2 Map 1.3 Map 1.6 Map 2.1 Map 3.1	Socio-technical Systems	<u>Main:</u> Part 2.C.1 Part 2.C.4 Part 2.C.6 <u>Appendix:</u> Appendix 3.A.D-3.ii Appendix 3.A.D-7.i Appendix 3.B.1 Appendix 3.B.4 Appendix 3.B.6 Appendix 4.A.P-6.ii	No differences noted.
Govern 6.1 Govern 6.2 Manage 3.1 Map 4.1	Supply Chain	<u>Main:</u> Part 2.E <u>Appendix:</u> Appendix 2.A.1-1 Appendix 2.A.3-4-1 Appendix 3.A.D-5.i Appendix 3.A.D-7.ii Appendix 3.B.8	No differences noted.
Map 1.1 Map 2.3 Measure 1.1 Measure 1.2 Measure 2.1 Measure 2.3 Measure 2.4 Measure 2.5 Measure 2.6 Measure 2.7 Measure 2.8 Measure 2.9 Measure 2.10 Measure 2.11 Measure 2.12 Measure 2.13 Measure 3.1 Measure 3.3 Measure 4.1 Measure 4.2 Measure 4.3	TEVV	<u>Main:</u> Part 2.C.6 Part 2.D.I <u>Appendix:</u> Appendix 2 Appendix 3.A.D-3.i Appendix 3.A.D-2.ii Appendix 3.A.D-3.ii Appendix 3.B.4 Appendix 4.A.P-6.ii Appendix 5.A.U-2.i	No differences noted.

NIST AI RMF 1.0 References	Topic	Japan AI GfB References	Notable Similarities & Differences
Govern 6.1 Govern 6.2 Manage 3.1 Map 4.1 Map 4.2	Third-party	<u>Appendix:</u> Appendix 3.A.D-2.i Appendix 3.A.D-2.ii Appendix 3.A.D-7.ii Appendix 3.C.II Appendix 4.A.P-5.i Appendix 4.B.2 Appendix 5.A.U-5.i Appendix 5.A.U-7.i Appendix 5.A.U-7.ii Appendix 5.B.2 Appendix 6.2	No differences noted.
Govern 2.2	Training (of AI Actors)	<u>Appendix:</u> Appendix 2.A.1-3 Appendix 2.A.2-1 Appendix 3.A.D-5.i Appendix 4.B.8	No differences noted.
Govern 1.2 Map 1.1 Map 3.2 Measure 1.1 Measure 2.1 Measure 2.5 Measure 4.2 Measure 4.3	Validity and Reliability	<u>Main:</u> Part 2.C.2 Part 2.D.VII Part 2.D.VIII <u>Appendix:</u> Appendix 2.A.3-2 Appendix 3.A.D-2.ii Appendix 3.A.D-10.i Appendix 4.A.P-2.i Appendix 4.A.P-5.ii Appendix 4.B.3	No differences noted.